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ABSTRACT

The frequency of evaluation across organizational levels (i.e., evaluation of inferiors by superiors) is related to three variables: the existence of bureaucratic rules, availability of information across levels, and interaction among participants. In a processual perspective, as opposed to a structural one, evaluation is viewed as a key mechanism for linking levels in organizations. The interlevel linkages created by evaluation processes among superintendents, principals, teachers, and students are examined. The fewer the levels in an evaluation situation in schools, the stronger the correlations between frequency of evaluation and bureaucratic procedures, availability of information, and interaction. Availability of information and interaction were more positively correlated with frequency of evaluation than were bureaucratic rules, which may serve as substitutes for direct evaluation. Interaction was the most powerful predictor of the frequency of the principal's self-reported evaluation of teachers on the task of teaching reading; bureaucratic rules were least powerful. Both information and interaction were powerful predictors of the teacher's report of the frequency with which the principal evaluated the teacher on the task of teaching subject matter; bureaucratic rules had no separate effect. Findings suggest that it is theoretically and empirically fruitful to adopt a processual approach in the study of interlevel linkages in school organizations. Frequency of evaluation appears to be a major indicator of the extent of loose coupling within organizations. (Author/EVH)

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FREQUENCY OF EVALUATION AS A MEASURE OF LINKS BETWEEN LEVELS IN SCHOOL ORGANIZATIONS

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Introductory Statement

The mission of the Stanford Center for Research and Development in Teaching is to improve teaching in American schools. Current major operations include three research and development programs--Teaching Effectiveness, The Environment for Teaching, and Teaching and Linguistic Pluralism--and two programs combining research and technical assistance, the Stanford Urban/Rural Leadership Training Institute and the Hoover/Stanford Teacher Corps Project. A program of exploratory and related studies provides for smaller studies that are not part of the major programs.

This paper is part of the work of the Environment for Teaching Program.

Abstract

This paper relates the frequency of evaluation across organizational levels (i.e., evaluation of inferiors by superiors) to three variables: the existence of bureaucratic rules, the availability of information across levels, and interaction among participants. We have taken a processual perspective, as opposed to a structural one, viewing evaluation as a key mechanism for linking levels in organizations. Using data from 103 schools in 30 northern California school districts, we examine the interlevel linkages created by evaluation processes among superintendents, principals, teachers, and students.

The fewer the levels in an evaluation situation in schools, the stronger the correlations between frequency of evaluation and bureaucratic procedures, availability of information, and interaction. Availability of information and interaction were more positively correlated with frequency of evaluation than were bureaucratic rules, which may serve as substitutes for direct evaluation.

Through regression analyses we found that interaction was the most powerful predictor of the frequency of the principal's self-reported evaluation of teachers on the task of teaching reading; bureaucratic rules were least powerful. Both information and interaction were powerful predictors of the teacher's report of the frequency with which the principal evaluated the teacher on the task of teaching subject matter; bureaucratic rules had no separate effect.

These findings suggest that it is theoretically as well as empirically fruitful to adopt a processual approach in the study of interlevel linkages in school organizations. Frequency of evaluation appears to be a major indicator of the extent of loose coupling within organizations.

Contents

Tables vi

Introduction 1

Empirical Hypotheses 5

Bureaucratization Hypotheses 5

Information Hypotheses 7

Interaction Hypotheses 8

Operational Definition of Key Variables 11

Bureaucratization 11

Information 11

Interaction 11

Evaluation 12

Source of Data 13

Analysis and Results 14

Bureaucratic Rules and Frequency of Evaluation 14

Availability of Information Across Levels and Frequency of Evaluation 18

Interaction and Frequency of Evaluation 21

Results by Number of Levels in an Evaluation Situation 26

Summary 27

Conclusion 34

Implications 36

References 37

Appendix 39

6

Tables

1. Relation Between Explicit District-Wide Policies and Frequency of Superintendent's Evaluation of Principals on School Administration 15

2. Relation Between Explicit Procedures and Frequency of Principal's Evaluation of Teachers on Teaching Reading 16

3. Relation Between Rules Governing Classroom Procedures and Frequency of Teacher's Evaluation of Students' Written Work 17

4. Relation Between Teacher's Expectation of Adherence to a Definite Sequence of Concepts in the Instructional Program and Frequency of Teacher's Evaluation of Students' Written Work 17

5. Relation Between School-Wide Policies Governing Student Conduct and Teacher Reports of Frequency of Evaluation on Maintaining Control 18

6. Relation Between Superintendent's Information about Schools and Frequency of Superintendent's Evaluation of Principals on School Administration 19

7. Relation Between Principal's Information about Classrooms and Frequency of Principal's Evaluation of Teachers on Teaching Reading 20

8. Relation Between Teacher's Perception of Principal as Well-Informed and Teacher's Report of Frequency of Evaluation by Principal on Teaching Subject Matter and Maintaining Control 21

9. Relation Between Principals' Reports of Interaction of Superintendent with Principals and Frequency of Superintendent's Reported Evaluation of Principals on School Administration 22

10. Relation Between Interaction of Principal with Teachers and Frequency of Principal's Reported Evaluation of Teachers on Teaching Reading 23

11. Relation Between Interaction of Teacher with Principal and Teacher's Report of Frequency of Principal's Evaluation of Teacher on Teaching Subject Matter 24

12. Relation Between Interaction of Teacher with Principal and Teacher's Report of Frequency of Principal's Evaluation of Teacher on Maintaining Control 24

13. Relation Between Interaction among Teachers and Individual Teacher's Report of Frequency of Other Teachers' Evaluation of Him or Her on Teaching Subject Matter 25

14. Relation Between Interaction among Teachers and Individual Teacher's Report of Frequency of Other Teachers' Evaluation of Him or Her on Maintaining Control 25

15. Relation Between Interaction of Teacher with Students and Frequency of Teacher's Reported Evaluation of Students' Written Work 26

16. Multiple Regression of Frequency of Principal's Reported Evaluation of Teachers on Its Determinants . 29

17. Matrix of Correlations of Principals' Responses . . . 30

18. Multiple Regression of Frequency of Teacher's Report of Principal's Evaluation of Teacher on Its Determinants 32

19. Matrix of Correlations on Teachers' Responses 33

A-1. Relation Between Explicit Procedures and Frequency of Principal's Evaluation of Teachers on Teaching Reading, Controlling for Sex, Tenure, SES of School, School Size, and Type of Classroom 41

A-2. Relation Between Rules Governing Classroom Procedures and Frequency of Teacher's Evaluation of Students' Written Work, Controlling for Sex, Tenure, SES of Students, Type of Classroom, and Teaming 42

A-3. Relation Between Teacher's Expectation of Adherence to a Definite Sequence of Concepts in Instructional Program and Frequency of Teacher's Evaluation of Students' Written Work, Controlling for Sex, Tenure, SES of Students, Type of Classroom, and Teaming . . . 43

A-4. Relation Between School-Wide Policies Governing Student Conduct and Teacher Reports of Frequency of Evaluation on Maintaining Control, Controlling for Sex, Tenure, SES of Students, Type of Classroom, and Teaming 44

A-5. Relation Between Principal's Information about Classrooms and Frequency of Principal's Evaluation of Teachers on Teaching Reading, Controlling for Sex, Tenure, SES of School, School Size, and Type of Classroom 45

A-6. Relation Between Teacher's Perception of Principal as Well-Informed and Teacher's Report of Frequency of Principal's Evaluation on Teaching Subject Matter and Maintaining Control, Controlling for Sex, Tenure, SES of Students, Type of Classroom, and Teaming 46

A-7. Relation Between Interaction of Principal with Teachers and Principal's Report of Frequency of Evaluation of Teachers on Teaching Reading, Controlling for Sex, Tenure in School, SES of School, School Size, and Type of Classroom 47

A-8. Relation Between Interaction of Teacher with Principal and Teacher's Report of Frequency of Principal's Evaluation of Teacher on Teaching Subject Matter, Controlling for Sex, Tenure, SES of Students, Type of Classroom, and Teaming . . . 48

A-9. Relation Between Interaction of Teacher with Principal and Teacher's Report of Frequency of Principal's Evaluation of Teacher on Maintaining Control, Controlling for Sex, Tenure, SES of Students, Type of Classroom, and Teaming 49

A-10. Relation Between Interaction among Teachers and Teacher's Report of Frequency of Other Teachers' Evaluation of Teacher on Teaching Subject Matter, Controlling for Sex, Tenure, SES of Students, Type of Classroom, and Teaming 50

A-11. Relation Between Interaction among Teachers and Teacher's Report of Frequency of Other Teachers' Evaluation of Teacher on Maintaining Control, Controlling for Sex, Tenure, SES of Students, Type of Classroom, and Teaming 51

A-12. Relation Between Interaction of Teacher with Students and Teacher's Report of Frequency of Evaluation of Students' Written Work in Reading, Controlling for Sex, Tenure, SES of Students, Type of Classroom, and Teaming 52

FREQUENCY OF EVALUATION AS A MEASURE OF LINKS BETWEEN LEVELS IN SCHOOL ORGANIZATIONS

Emmanuel A. Utande and Sanford M. Dornbusch

Introduction

This paper attempts to identify the pattern of relationships between frequency of evaluation across levels in the organizational hierarchy and three other variables: the existence of bureaucratic rules, availability of information across levels, and interaction among participants.

We have taken a processual or functional perspective, as opposed to a structural perspective, viewing evaluation as a key mechanism for linking or coupling levels within organizations. Specifically, we will study school organizations, examining the usefulness of "frequency of evaluation" as a device for discovering the strength of linkages up and down the school system. To date there has been no systematic study of evaluation processes as an indicator of the degree to which levels of an organization are linked. Schools are usually considered loosely coupled, with a relatively low level of coordination of performances throughout the organization (Glassman, 1973; Cohen and March, 1974; March and Olsen, 1975; Weick, 1976; Meyer and Rowan, 1975).

Evaluation is central to all forms of organization. Evalaution includes allocating tasks to performers, setting standards for judging performances, and sampling and appraising performance output. These evaluation processes are a key element in organizational control

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(Dornbusch and Scott, 1975). In the context of this study, to evaluate is also to control.

We will examine the interlevel linkages of evaluation processes among superintendents, principals, teachers, and students. Our data come from 103 schools in 30 school districts. While we recognize that linkages may assume different forms from one unit to another, our primary interest is vertical linkages. Thus, we are concerned with the relationship between three variables (bureaucratic rules, information, and interaction) and the frequency with which evaluators, usually superiors in the organizational hierarchy, perform their control tasks.

It is useful to identify some of the factors associated with the frequency of evaluation of principals by the superintendent, of teachers by the principal, and of students by the teachers. We know that, with the exception of teachers evaluating students, hierarchical evaluation in schools is generally infrequent (Thompson, Dornbusch, and Scott, 1975). Nevertheless, some evaluation does occur, and knowledge of factors associated with it will both improve our understanding of organizations and also have policy implications. We believe that "Evaluation is fundamental to the regulation of task performances in organization systems; and evaluation processes are essential to the regulation of the control systems themselves, as arbitrary power is domesticated to become regularized authority" (Dornbusch and Scott, 1975, p. x).

Until recently, the literature in this area included discussions of different control strategies employed by organizations. Among commonly discussed strategies were direct supervision; performance records (Blau and Scott, 1962; Anderson, 1968); impersonal mechanisms, such as the conveyor belt (Walker and Guest, 1952); socialization or professionalization; and the use of bureaucratic rules (Gouldner, 1954; Goslin, 1965).

We will focus on one major control strategy, the use of bureaucratic rules in school, and relate that strategy to evaluation. Gouldner has shown the importance of rules and their enforcement in

industry (Gouldner, 1954). Our analysis of rules will link them to the evaluation system as part of our analysis of control systems which couple levels in school systems.

A new approach to hierarchical systems of control is concerned with the extent of linking or coupling within an organization. No formal definition of coupling seems widely accepted, but we can name some characteristics of social systems that roughly describe loose coupling. For example, Weick (1976) portrays loose coupling between parts of an organization as indicating the parts are attached, but their attachment may be circumscribed, infrequent, and weak. Though Weick's attempt to identify characteristics associated with loose coupling is commendable, he neglects to mention fundamental processes that operate across organizational levels--such as patterns of evaluation. Physical separation of organizational participants is neither necessary nor sufficient to characterize loosely coupled systems. Organizational systems are linked through different processes of which evaluation is one. Therefore, we suggest a perspective that would examine evaluation processes across organizational levels. Thus, evaluation processes could be an indicator of coupling.

Our study of interlevel linkages of performance evaluation incorporates the following assumptions. First, the need for an explicit pattern of allocating tasks to participants (a part of the evaluation process) often leads to the establishment of specific rules or procedures. Second, evaluators want their evaluations to be perceived as based on relevant information. The availability of information also implies the possibility of regular inspection of task performances. Third, when evaluators and evaluatees interact, their contact often provides an increased possibility that information across levels will be available or appraisals will be made. Thus, frequency of evaluation will be associated with the presence of rules, availability of information, and frequency of interaction.

Although we do not make any assumption about the direction of causation, we will examine the association between the above three variables and the frequency of evaluation. It is possible that

frequency of evaluation, for example, is the independent variable that leads to increased availability of information or increased contact. Similarly, although less directly, bureaucratic rules or procedures may be introduced as a substitute for frequency of evaluation, thus producing a lower relationship between frequency of evaluation and the presence of such rules or procedures. We cannot determine causation for these associated variables; we can test, however, the strength of the relationships between frequency of evaluation and each of the three variables. Our general propositions are as follows:

> There will be more frequent evaluation of performances if there are explicit rules, regulations, or policies about a given task.
>
> There will be more frequent evaluation of performances if more information about a task is readily available to an evaluator.
>
> There will be more frequent evaluation of performances if there is more frequent interaction between an evaluator and an evaluatee.

The number of levels involved in evaluation may affect the strength or direction of predicted relationships. When we test these three general propositions, we consider the number of levels to be the distance between the highest level involved in an evaluative act and the lowest. Thus, if the superintendent (district level) evaluates principals (school level) on the basis of student performance or achievement, we will treat this evaluation situation as involving four levels, from superintendent through principals and teachers to student performance. If the evaluation of principals by superintendent is based on the performance of teachers, we will treat this as three levels. If the superintendent's evaluation of principals looks at the principals' performance only, that evaluation situation involves only two levels. (For collegial evaluation, such as among teachers, the evaluation operates within a single level. We deal only incidentally with collegial evaluation.)

Empirical Hypotheses

From the three propositions, we derived forty-two empirical hypotheses relating frequency of evaluation in school organizations to the existence of bureaucratic rules, availability of information, and interaction among participants. Although some hypotheses may seem repetitive, each hypothesis deals with frequency of evaluation in a specific task situation.

I. Bureaucratization Hypotheses

Superintendent as the Evaluator

(1.1) The more explicit the district-wide policies concerning the type of curricular materials that teachers are expected to use, the more likely a superintendent is to report frequent evaluation of principals on the task of school administration (3 levels).

(1.2) The more explicit the district-wide policies concerning instructional methods teachers are expected to use, the more likely a superintendent is to report frequent evaluation of principals on the task of school administration (3 levels).

(1.3) The more explicit the district-wide policies concerning rules for student conduct, the more likely a superintendent is to report frequent evaluation of principals on the task of school administration (4 levels).

(1.4) The more explicit the district-wide policies concerning the criteria for evaluating student learning, the more likely a superintendent is to report frequent evaluation of principals on the task of school administration (4 levels).

Principal as the Evaluator

(1.5) If a school has procedures for evaluating the success of a reading program for students, a principal is likely to report

more frequent evaluation of teachers on the teaching of reading (3 levels).

(1.6) If the district office expects a principal to keep records containing systematic information on teacher evaluation, the principal will report more frequent evaluation of teachers on the teaching of reading (3 levels).

(1.7) If there are standard district-wide forms for teacher evaluation, a principal is likely to report more frequent evaluation of teachers on the teaching of reading (3 levels).

(1.8) If a school has evaluation forms for teacher evaluation, a principal will report more frequent evaluation of teachers on the teaching of reading (2 levels).

Teacher as the Evaluator

(1.9) If there are rules or guidelines governing classroom procedures, a teacher is likely to report more frequent evaluation of students' written work in math, reading, and social studies (2 levels).

(1.10) If a teacher usually adheres to a definite sequence of concepts or lessons in instructional programs, he or she is likely to report more frequent evaluation of students' written work in math, reading, and social studies (2 levels).

Teacher as the Evaluatee

(1.11) If there are school-wide policies that govern student conduct, a teacher is likely to report receiving more frequent evaluation by the principal on the task of maintaining control of students (3 levels).

(1.12) If there are school-wide policies that govern student conduct, a teacher is likely to report receiving more frequent evaluation by other teachers on the task of maintaining control of students (3 levels).

II. Information Hypotheses

Superintendent as the Evaluator

(2.1) If a superintendent has readily available information for each school on criteria-based achievement scores for students, he or she is likely to report more frequent evaluation of principals on the task of school administration (4 levels).

(2.2) If a superintendent has readily available information for each school on methods of reading instruction used by teachers, he or she is likely to report more frequent evaluation of principals on the task of school administration (3 levels).

(2.3) If a superintendent has readily available information for each school on the criteria for evaluating student learning, he or she is likely to report more frequent evaluation of principals on the task of school administration (4 levels).

(2.4) If a superintendent considers himself or herself informed about instructional matters, he or she will report more frequent evaluation of principals on the task of school administration (3 levels).

(2.5) If a superintendent uses student scores on either state-mandated standardized tests or other ability tests in evaluating schools, he or she is likely to report more frequent evaluation of principals on the task of school administration (4 levels).

Principal as the Evaluator

(2.6) If a principal has readily available information on methods of reading instruction used in each classroom, he or she is likely to report more frequent evaluation of teachers on the teaching of reading (2 levels).

(2.7) If a principal has readily available information on either criteria-based achievement scores or on the criteria for evaluating student learning, he or she is likely to report more

frequent evaluation of teachers on the teaching of reading (3 levels).

(2.8) If any other systematic data on student performances are used as sources of information for evaluating a reading program, the principal is likely to report more frequent evaluation of teachers on the teaching of reading (3 levels).

Teacher as the Evaluatee

(2.9) If a teacher perceives the principal as well-informed about instructional matters in general, he or she is likely to report more frequent evaluation by the principal on the task of teaching subject matter (2 levels).

(2.10) If a teacher perceives the principal as well-informed about discipline problems, he or she is likely to report more frequent evaluation by the principal on the task of maintaining control (2 levels).

(2.11) If a teacher perceives the principal as well-informed about classroom instructional activities, he or she is likely to report more frequent evaluation by the principal on the task of teaching subject matter (2 levels).

III. Interaction Hypotheses

In this study, no interaction hypothesis extends beyond two levels.

Superintendent as the Evaluator

(3.1) The more a superintendent talks with principals about their work, the more frequently he or she will report evaluation of principals on school administration (2 levels).

(3.2) If a superintendent reports giving advice or information about management to principals, he or she will report more frequent evaluation of principals on the task of school administration (2 levels).

Principal as the Evaluator

(3.3) If a principal talks with teachers about their work, he or she will report more frequent evaluation of teachers on the teaching of reading (2 levels).

(3.4) If a principal reports giving advice about teaching to teachers, he or she will report more frequent evaluation of teachers on the teaching of reading (2 levels).

Teacher as the Evaluator

(3.5) If a teacher talks to students about their specific skill needs, he or she will report more frequent evaluation of students' written work in reading (2 levels).

(3.6) If a teacher talks to students about their interest in reading, he or she will report more frequent evaluation of students' written work in reading (2 levels).

Teacher as the Evaluatee

(3.7) If a teacher talks more often with the principal, he or she will report more frequent evaluation by the principal on the task of teaching subject matter (2 levels).

(3.8) If a teacher talks more often with the principal, he or she will report more frequent evaluation by the principal on the task of maintaining control (2 levels).

(3.9) If a teacher seeks out the principal to talk about the teacher's work, he or she will report more frequent evaluation by the principal on the task of teaching subject matter (2 levels).

(3.10) If a teacher seeks out the principal to talk about the teacher's work, he or she will report more frequent evaluation by the principal on the task of maintaining control (2 levels).

(3.11) If a teacher reports advice on classroom teaching practices by the principal, the teacher will report more frequent evaluation by the principal on the task of teaching subject matter (2 levels).

(3.12) If a teacher reports advice on classroom teaching practices by the principal, the teacher will report more frequent evaluation by the principal on the task of maintaining control (2 levels).

(3.13) If a teacher takes other classroom teachers into account with respect to teaching approach, he or she will report more frequent evaluation by other teachers on the task of teaching subject matter (1 level).

(3.14) If a teacher takes other classroom teachers into account with respect to teaching approach, he or she will report more frequent evaluation by other teachers on the task of maintaining control (1 level).

(3.15) If a teacher takes other classroom teachers into account with respect to lesson content, he or she will report more frequent evaluation by other teachers on the task of teaching subject matter (1 level).

(3.16) If a teacher takes other classroom teachers into account with respect to scheduling of class periods, he or she will report more frequent evaluation by other teachers on the task of maintaining control (1 level).

(3.17) If a teacher shares instructional materials with other teachers, he or she will report more frequent evaluation by other teachers on maintaining control (1 level).

(3.18) If a teacher is a member of a teaching team, he or she is likely to report more frequent evaluation by other teachers on teaching subject matter (1 level).

(3.19) If a teacher is a member of a teaching team, he or she is likely to report more frequent evaluation by other teachers on maintaining control (1 level).

Operational Definition of Key Variables

Bureaucratization

Bureaucratization refers to any process made relatively routine by explicit rules or policies. These rules may be established by the state, the district office, or an individual school. The existence of rules or procedures is a good indicator of bureaucratization in school organizations. The rules may be concerned with allocating tasks, setting standards, sampling performances, or appraising performances. We are interested in the existence of rules and not whether they really function properly, because we expect that the mere existence of rules or standard operating procedures will exert some pressure on evaluators as well as evaluatees.

Information

Information is used here to refer to self-reported knowledge of an event. An event can relate to a task, a performance, or a performer. Knowledge of student achievement scores is an example of information. Bureaucratization could be related to information in a variety of ways. For instance, a district or school may have an explicit rule or policy governing the flow of knowledge about tasks, performances, and performers. Information is also related to interaction, as noted below.

Interaction

Interaction is a process that involves some form of social exchange between evaluator and evaluatee, usually face-to-face. Interaction occurs as evaluator and evaluatee engage in behavior that brings them together. We are not concerned with the motivation for such contacts. Indicators of interaction in this context include talking with other participants in the organization and sometimes giving advice or information to task performers. The relationship between interaction and information evolves from the fact that social exchange incorporates some form of communication of knowledge.

Evaluation

Evaluation in the context of this study describes a process whereby participants "learn in any way, indirectly or directly, how well or poorly their evaluator thinks they are doing on an organizational task" (Dornbusch and Scott, 1975, p. 135). In school organizations, superintendents, principals, and teachers may be the evaluators. In this study evaluation is operationalized to be task specific. Superintendents were asked how frequently they evaluate principals on the single task of school administration. Principals were asked how frequently they evaluate teachers on two tasks: teaching subject matter and maintaining control in the classroom. Teachers were asked how frequently they evaluate students' written work in three subjects: math, reading, and social studies.

Because the data we used had been collected for another study before we conceptualized this research problem, our choice of indicators to operationalize each of our key variables was constrained. For example, we can make no distinction between a policy and a procedure that may govern the performance of a specific task. Both policy and procedure are treated as indicators of bureaucratization, although they might not be related to frequency of evaluation in the same fashion--at the district level of school organization, we have only policies as indicators of bureaucratization, while at the school and classroom levels we have only procedures. Neither do we distinguish between procedures that govern the performance of "active" tasks and those that govern "inert" tasks (Dornbusch and Scott, 1975), although rules concerning instructional methods or student conduct may be related differently to frequency of evaluations than are rules concerning student achievement or the keeping of school records.

Similarly, in operationalizing the availability of information across levels, we make no distinction between different types of information. Information about methods of reading instruction may, however, be related differently to frequency of evaluation than is information on achievement scores.

Interaction was measured by reports of frequency of talking with others, dispensing of advice, or seeking out others in connection with work, or teaming, sharing instructional materials, or otherwise taking other teachers into account.

We want to emphasize that principals are evaluated on the single task of school administration. That task embraces many subtasks that individually could become the main preoccupation of either the evaluator or the evaluatee. There are obvious limitations, then, in evaluating principals on a task as global as "school administration." But we have no choice, since the available data refer only to that task. We are, however, studying the numerous specific hypotheses as individually indicating the strength of the general relationships posited in our three basic propositions. From that standpoint, we can accept the inadequacies of each specific measure as we attempt to discern the general pattern of support or rejection of our three propositions.

Source of Data

Our data come from a survey of elementary schools in northern California by the Environment for Teaching Program, Stanford Center for Research and Development in Teaching, in 1975. The principal investigators were Elizabeth G. Cohen, Terrence E. Deal, John W. Meyer, and W. Richard Scott. The study involved the participation of 30 superintendents, 103 principals, and 469 teachers drawn from 30 different school districts. The districts were drawn from urban, suburban, and rural areas and ranged in size from a district containing only one school to a district with 133 schools. The number of schools selected for the study within each district varied according to the size of the district. One hundred and three schools were involved in the study, and the subpopulations of superintendents, principals, and teachers were drawn through stratified random sampling.

Two types of instruments were constructed for collecting the data. There were questionnaires for occupants of every position and interview schedules for the principals and superintendents. Both the questionnaires and the interview schedules contained structured as

well as open-ended questions. The teacher and principal questionnaires were pretested before the actual survey, but the questionnaire for superintendents was not pretested because of the similarity of the questionnaires and interview schedules to those used for principals. There were two versions of the teacher questionnaire: one for all teachers and another for sixteen schools selected for intensive study.

The questionnaires were mailed to principals and superintendents before they were interviewed. The principal interviews lasted between forty-five minutes and one hour; the superintendent interviews lasted about thirty minutes. The teacher questionnaires were administered in groups and took about forty minutes.

The data collected were scanned by us to find any possible relationships at any level that could be used to test our three propositions. It is our hope that such secondary analysis will counterbalance the deficiencies of any single hypothesis by providing a large set of interrelated and consistent findings.

Analysis and Results

Cross-tabulation is the basic procedure for our analysis of the data. Goodman and Kruskal's gamma is used as a nonparametric measure of association for contingency tables having ordinal scales (Goodman and Kruskal, 1954). Gamma measures both the direction and the magnitude of association. We also performed some regression analyses to determine the relative strength of the three propositions as they each related to frequency of evaluation. This is the equivalent of partial correlation.

Bureaucratic Rules and Frequency of Evaluation

Tables 1 to 5 report the results of testing all the bureaucratization hypotheses. Tables A-1 to A-4 in the Appendix report the results obtained when certain control variables (teacher and school characteristics) are explicitly taken into account. At the district level, four hypotheses were tested using reports by superintendents. It was predicted that the existence of explicit rules or procedures

TABLE 1

Relation Between Explicit District-Wide Policies and Frequency of Superintendent's Evaluation of Principal's on School Administration

Policy Area	Gamma	N
Type of curricular materials to be used	.08	28
Instructional methods or techniques used	-.27	28
Rules for student conduct on school grounds	-.67	28
Criteria for evaluating student learning	.14	28

would be positively correlated with the frequency of the superintendent's evaluation of principals on the task of school administration. Two of the correlations were positive and two others were negative (see Table 1). We found a weak positive correlation between the frequency of the superintendent's evaluation of principals and the existence of explicit district-wide policies concerning type of curricular materials and the criteria for evaluating student learning. But we found a negative correlation between the frequency of the superintendent's evaluation of principals and the district having explicit policies concerning instructional methods and rules for student conduct on school grounds. None of these relationships was statistically significant.

At the school level, four hypotheses were tested using reports by principals. All four of the correlations were in the predicted positive direction (see Table 2). Thus, we found positive correlations between the frequency of the principal's evaluation of teachers on the task of teaching reading and the following: school procedures for evaluating the success of a reading program; expectation that principals keep systematic records on teacher evaluation; district-wide standard forms for teacher evaluation; and school forms for

TABLE 2

Relation Between Explicit Procedures and Frequency of Principal's Evaluation of Teachers on Teaching Reading

Type of Procedure	Gamma	N
School has procedures for evaluating the success of a reading program	.25*	103
District expects principal to keep systematic records on teacher evaluation	.13	102
Existence of district-wide standard forms for teacher evaluation	.18	103
Existence of school-wide forms for teacher evaluation	.93	101

*$p < .05$

teacher evaluation. The relationship in one instance is statistically significant at the .05 level, but the four correlations are weak, although in the expected direction.

At the classroom level, three hypotheses were tested using reports by teachers. All three were confirmed. We found positive correlations between the frequency of teacher's evaluation of students' written work in math, reading, and social studies and the presence of rules or guidelines governing classroom procedures. The correlations are moderately strong and statistically significant. The correlations are also strongly positive and statistically significant if the teachers expect to adhere to a definite sequence of concepts or lessons in the instructional program. Tables 3 and 4 contain these findings.

It was further predicted that the teacher's report of the principal's and other teachers' evaluation of him or her in maintaining

TABLE 3

Relation Between Rules Governing Classroom Procedures and Frequency of Teacher's Evaluation of Students' Written Work

Task Evaluated	Gamma	N
Math	.35***	163
Reading	.35***	168
Social studies	.34*	191

*p < .05
***p < .001

TABLE 4

Relation Between Teacher's Expectation of Adherence to a Definite Sequence of Concepts in the Instructional Program and Frequency of Teacher's Evaluation of Students' Written Work

Task Evaluated	Gamma	N
Math	.52***	164
Reading	.44***	169
Social studies	.25*	192

*p < .05
***p < .001

control in the classroom would be positively correlated with the existence of school-wide policies governing student conduct. This was confirmed (see Table 5). The correlations are weak, but the relationship is statistically significant when the principal is the source of evaluation.

TABLE 5

Relation Between School-Wide Policies Governing Student Conduct and Teacher Reports of Frequency of Evaluation on Maintaining Control

Source of Evaluation	Gamma	N
Principal	.19*	221
Other teachers	.19	221

*$p < .05$

In summary, the predicted relationship of bureaucratization to frequency of evaluation is nonexistent at the district level, positive at the school level, and strongly positive at the classroom level.

Availability of Information Across Levels and Frequency of Evaluation

It was hypothesized that availability of information about tasks across school levels would be positively correlated with frequency of evaluation. In other words, an evaluator who has readily available information is likely to report more frequent evaluation of performers on a given task; and an evaluatee who perceives his or her evaluator as well-informed about task performance is likely to report receiving more frequent evaluations. Tables 6 to 8 report the results of testing information on hypotheses 2.1 to 2.11.

We found weak correlations between the frequency of the superintendent's evaluation of principals on school administration and availability (to the superintendent) of information on criteria used for evaluating student learning, on student scores on other ability tests, and on instructional matters. On the other hand, we found no relation between the frequency of the superintendent's evaluation of principals on school administration and availability of information on criterion-based achievement scores. There was a negative correlation between the frequency of the superintendent's evaluation of principals and information on methods of reading instruction. These findings are reported in Table 6. It is important to note that the

TABLE 6

Relation Between Superintendent's Information about Schools and Frequency of Superintendent's Evaluation of Principals on School Administration

Type of Information	Gamma	N
Criteria-based achievement scores	-.01	28
Methods of reading instruction	-.49	28
Criteria used in evaluating student learning	.26	28
Student scores on other ability tests	.09	28
Instructional matters	.25	28

sample size of superintendents makes it difficult to determine whether chance processes affected these results. None of these findings was statistically significant. It will be recalled that two bureaucrati-

zation hypotheses at the district level were not confirmed; once again the predicted relations are nonexistent at the district level, this time for the information hypotheses.

At the school level, all three hypotheses tested were confirmed (see Table 7). Thus, we found positive correlations between the

TABLE 7

Relation Between Principal's Information about Classrooms and Frequency of Principal's Evaluation of Teachers on Teaching Reading

Type of Information	Gamma	N
Methods of reading instruction	.26	103
Criteria-based achievement scores or criteria for evaluating student learning	.41*	103
Other systematic data on student performance as sources of information	.20	103

*$p < .05$

principal's evaluation of teachers on teaching reading and the availability of information (to the principal) on methods of reading instruction, a statistically significant result for criteria-based achievement scores or criteria for evaluating student learning, and a positive result for the principal's use of other systematic data on student performance as sources of information. Once again, all the results are moderately strong. The correlations remained strong and positive when we controlled for sex of teacher, tenure, SES of students, type of classroom, and teaming (see Table A-5 of the Appendix).

TABLE 8

Relation Between Teacher's Perception of Principal as Well-Informed and Teacher's Report of Frequency of Evaluation by Principal on Teaching Subject Matter and Maintaining Control

Type of Information	Gamma	N
(Subject Matter)		
Instructional matters	.44***	449
Classroom instructional activities	.58***	448
(Maintaining Control)		
Discipline problems in classrooms	.43***	449

***p < .001

We found strong positive correlations between the teacher's report of frequency of the principal's evaluation and the teacher's perception of the principal as well-informed about instructional matters in general, discipline problems in classrooms, and classroom instructional activities. All three relationships are statistically significant at the .001 level. Table 8 contains these findings. The correlations remained strong and positive when we controlled for sex of teacher, tenure, SES of students, type of classroom, and teaming (see Table A-6 of the Appendix).

Interaction and Frequency of Evaluation

It was hypothesized that interaction among participants in school organizations would be positively correlated with frequency of evaluation. Tables 9 to 15 report the results of testing interaction hypotheses 3.1 to 3.19.

At the district level, we found a moderately strong correlation for one hypothesis and almost a zero correlation for the other. There were positive correlations between frequency of the superintendent's evaluation of principals on school administration and the superintendent's talking with principals or giving advice to them about management. Neither relationship was statistically significant (see Table 9).

TABLE 9

Relation Between Principals' Reports of Interaction of Superintendent with Principals and Frequency of Superintendent's Reported Evaluation of Principals on School Administration

Nature of Interaction	Gamma	N
Superintendent talks with principals about their work	.03	28
Superintendent gives advice about management to principals	.32	28

Both hypotheses tested at the school level were confirmed. We found a strong positive correlation between frequency of the principal's evaluation of teachers on teaching reading and the frequency of the principal's talking with teachers about their work or advising them about teaching. Each of the relationships is statistically significant at the .001 level. Table 10 contains these findings.

At the classroom level, all fifteen empirical hypotheses tested were supported. We found moderately strong correlations between frequency of the teacher's report of the principal's evaluation and frequency of the teacher's report of interaction with the principal. The correlations between frequency of the teacher's report of other

TABLE 10

Relation Between Interaction of Principal with Teachers and Frequency of Principal's Reported Evaluation of Teachers on Teaching Reading

Nature of Interaction	Gamma	N
Principal talks with teachers about their work	.55***	103
Principal gives advice about teaching to teachers	.57***	103

***p < .001

teachers' evaluations on the tasks of teaching subject matter and maintaining control and frequency of individual teacher reports of interaction with other teachers were relatively weak but positive. We also found a positive correlation between frequency of the teacher's report of evaluation of students' written work in reading and frequency of the teacher's report of interaction with students. Nine of the relationships are statistically significant at the .01 level or better, while the other six relationships are not statistically significant but are all consistently positive as predicted by our theory. These results are reported in Tables 11 through 15.

Controlling for sex of teacher, tenure, socioeconomic status (SES) of students, type of classroom, and teaming, we found the same general pattern; that is, positive correlations between interaction of the teacher with the principal and with other teachers and the teacher's report of the frequency of their evaluation, and interaction of the teacher with students and the teacher's report of the frequency of evaluation of students' written work in reading (see Tables A-7 to A-12 of the Appendix).

TABLE 11

Relation Between Interaction of Teacher with Principal and Teacher's Report of Frequency of Principal's Evaluation of Teacher on Teaching Subject Matter

Nature of Interaction	Gamma	N
Teacher talks with principal	.27***	447
Teacher seeks out the principal to talk about teacher's work	.33**	223
Teacher reports advice on classroom teaching practices by principal	.45***	447

**p < .01
***p < .001

TABLE 12

Relation Between Interaction of Teacher with Principal and Teacher's Report of Frequency of Principal's Evaluation of Teacher on Maintaining Control

Nature of Interaction	Gamma	N
Teacher talks with principal	.30***	447
Teacher seeks out the principal to talk about teacher's work	.37***	223
Teacher reports advice on classroom teaching practices by principal	.35***	447

***p < .001

TABLE 13

Relation Between Interaction among Teachers and Individual Teacher's Report of Frequency of Other Teachers' Evaluation of Him or Her on Teaching Subject Matter

Nature of Interaction	Gamma	N
Teacher takes other classroom teachers into account on teaching approach	.32**	216
Teacher takes other classroom teachers into account on lesson content	.25	217
Teacher is member of a teaching team	.29	209

**p < .01

TABLE 14

Relation Between Interaction among Teachers and Individual Teacher's Report of Frequency of Other Teachers' Evaluation of Him or Her on Maintaining Control

Nature of Interaction	Gamma	N
Teacher takes other classroom teachers into account on teaching approach	.25	216
Teacher takes other classroom teachers into account on scheduling of class periods	.09*	216
Teacher shares instruction materials with other teachers	.23	217
Teacher is a member of a teaching team	.27	209

*p < .05

TABLE 15

Relation Between Interaction of Teacher with Students and Frequency of Teacher's Reported Evaluation of Students' Written Work

Nature of Interaction	Gamma	N
Teacher talks to students about their specific skill needs	.54***	207
Teacher talks to students about their interest in reading	.20	207

***p < .001

Results by Number of Organizational Levels in an Evaluation Situation

In summarizing our findings by the number of school levels involved in an evaluation situation, it is important to note that there were four hierarchical positions or levels in our theoretical model. The forty-two hypotheses tested were distributed as follows: five hypotheses involved four levels, eleven involved three levels, nineteen involved two levels, and seven involved one level. Three of the five hypotheses involving four levels were confirmed and two were not. Nine of the eleven hypotheses involving three levels were confirmed and two were not; three of the relationships were statistically significant and were in the predicted direction. All nineteen hypotheses involving two levels were confirmed; fourteen of the relationships were statistically significant and were consistent with our theory. All seven hypotheses involving one level were confirmed; one of the relationships was statistically significant and was in the expected direction. The distribution of these findings indicates that the number of levels involved in an evaluation situation may be related

to frequency of evaluation. It seems the fewer the levels in an evaluation situation, the stronger the correlation between frequency of evaluation and bureaucratic procedures, availability of information, and interaction.

Essentially, then, we had four negative correlations out of forty-two examined. All four occurred when the evaluator was at the level of the district or superintendent, and all involved three or more levels. No hypothesis was unsupported when it involved two levels or when the evaluator was the principal, the teacher, or other teachers. Thus, interaction, which always involved two levels, was always supported, even at the district level.

Summary

From the findings, we would conclude that availability of information across levels and interaction among participants are positively correlated with frequency of evaluation in school organizations. The relative weakness of the relationship to bureaucratic rules may be a result of bureaucratic rules serving as substitutes for direct evaluation.

Having found positive correlations between frequency of evaluation and our three main variables--bureaucratic rules, information, and interaction--the next step was to determine the relative strength of these correlations when they are considered together. This led us to perform some regression analyses. We selected two representative variables each for bureaucratization, for information, and for interaction as predictors of frequency of evaluation. This analysis was possible only at the school and classroom levels, where our measures could be related to larger numbers of respondents.

The six variables selected for the analysis at the school level were as follows.

For bureaucratization:

(1) The existence of district-wide forms for teacher evaluation.

(2) The existence of school-wide forms for teacher evaluation.

For information:

(3) The principal's having readily available information on criterion-based achievement scores.
(4) The principal's having readily available information on the methods of reading instruction used in each classroom.

For interaction:

(5) The principal's talking with teachers about their work.
(6) The principal's advising teachers about teaching.

Tables 16 and 17 contain the results of regressing the frequency of the principal's evaluation of the teaching of reading on these six factors. Together they account for 43 percent of the variation in the frequency of the principal's evaluation of teachers. The overall accuracy of this prediction equation is high, as can be seen from the size of the computed F-ratio, which is 12.19 (with 6 and 96 degrees of freedom). The probability of this result arising from chance is less than .001.

To compare the representative variables in the regression equation meaningfully, we have to use the standardized regression coefficient rather than the raw partial regression coefficient. This is necessary because not all six of the variables were measured on a uniform scale. Table 16 shows that interaction is the most powerful among the three categories of variables in predicting the frequency of the principal's evaluation of teachers. The probability value for this prediction is less than .001 for the two representative variables. Information and bureaucratic rules are about the same in regression coefficients, and each has one statistically significant relationship and one nonsignificant relationship.

At the classroom level, the teacher was treated not as an evaluator but as an evaluatee reporting the principal's evaluation of the teacher on teaching subject matter. As before, we selected two representative variables of bureaucratic rules, information, and

TABLE 16

Multiple Regression of Frequency of Principal's Reported Evaluation of Teachers on Its Determinants

Independent Variables	Partial Regression Coefficient	Standardized Regression Coefficient	F
District-wide teacher evaluation forms	.02	.00	0.00
School-wide teacher evaluation forms	.38	.17	4.73*
Principal has readily available information on criteria-based achievement scores	.23	.18	4.75*
Principal has readily available information on methods of reading instruction for each classroom	.07	.05	0.42
Principal talks with teachers about their work	.34	.35	18.17***
Principal advises teachers about teaching	.24	.31	14.08***

Multiple R^2 = .43
F-ratio = 12.19***

*p < .05
***p < .001

TABLE 17

Matrix of Correlations of Principals' Responses

	1	2	3	4	5	6	7
1	-	.07	.27	.00	.01	.03	.05
2		-	.06	.14	.06	.03	.22
3			-	.28	.17	.10	.30
4				-	.04	.15	.19
5					-	.35	.48
6						-	.49
7							-

1 - District-wide teacher evaluation forms

2 - School-wide teacher evaluation forms

3 - Principal has readily available information on criteria-based achievement scores

4 - Principal has readily available information on methods of reading instruction for each classroom

5 - Principal talks with teachers about their work

6 - Principal advises teachers about teaching

7 - Principal's reported frequency of evaluating teachers on teaching reading

interaction. The variables selected for the analysis at the classroom level were as follows.

For bureaucratic rules:

(1) The teacher follows the principal's suggestions concerning teaching methods or approach.
(2) The teacher follows the principal's suggestions concerning curriculum content.

For information:

(3) The teacher perceives the principal as well-informed about classroom instructional activities.
(4) The teacher perceives the principal as well-informed about instructional matters in general at any grade level.

For interaction:

(5) The teacher reports receiving the principal's advice or suggestions for changes in classroom teaching practices.
(6) The teacher talks with the principal.

Tables 18 and 19 report the results of regressing the frequency of each teacher's report of the principal's evaluation of him or her on these six factors. These factors account for 32 percent of the variation in the teachers' reports of the frequency with which they were evaluated on the task of teaching subject matter. The probability that this result is due to chance is less than .001. This result is a good indication of the overall accuracy of our prediction equation.

In comparing the performance of the six variables in the regression equation, information, for one variable only, seems to do better than interaction in this situation, but both are relatively the most powerful predictors. Table 18 indicates that the two bureaucratization variables have practically no effect on the frequency of the teacher's report of the principal's evaluation of the teacher on teaching subject matter. In both cases, the partial as well as the standardized regression coefficient is almost zero. It is also clear from Tables 17 and 19 that information variables are positively correlated with interaction variables. The correlations are generally much stronger than the correlations of bureaucratization variables with other variables, as can be seen from the correlation matrices.

TABLE 18

Multiple Regression of Frequency of Teacher's Report of Principal's Evaluation of Teacher on Its Determinants

Independent Variables	Partial Regression Coefficient	Standardized Regression Coefficient	F
Teacher follows principal's suggestions concerning teaching methods	.01	.01	0.05
Teacher follows principal's suggestions concerning curriculum content	.02	.01	0.09
Teacher perceives principal as well-informed about classroom instructional activities	.50	.38	43.97***
Teacher perceives principal as well-informed about instructional matters at any grade level	.07	.05	0.83
Teacher reports receiving principal's advice on classroom teaching practices	.33	.22	27.47***
Teacher talks with principal	.07	.06	2.43

Multiple R^2 = .32
F ratio = 33.32***

***p < .001

TABLE 19

Matrix of Correlations of Teachers' Responses

	1	2	3	4	5	6	7
1	-	.69	.29	.29	.11	.02	.18
2		-	.24	.28	.06	.02	.15
3			-	.69	.30	.27	.51
4				-	.30	.22	.41
5					-	.23	.28
6						-	.23
7							-

1 - Teacher follows principal's suggestions concerning teaching

2 - Teacher follows principal's suggestions concerning curriculum content

3 - Teacher perceives principal as well-informed about classroom instructional activities

4 - Teacher perceives principal as well-informed about instructional matters

5 - Teacher reports receiving principal's advice on classroom teaching practices

6 - Teacher talks with principal

7 - Teacher reports of frequency of principal's evaluation of teacher on teaching subject matter

Conclusion

By doing some regression analyses, we found that interaction is the most powerful predictor of frequency of the principal's report of evaluation of teachers on teaching reading. Bureaucratic rules are the least powerful compared to interaction and information. At the classroom level, both information and interaction are powerful predictors of frequency of the teacher's report of the principal's evaluation of the teacher on teaching subject matter, and bureaucratization had no separate effects on the frequency of evaluation.

These findings suggest that it is theoretically as well as empirically fruitful to adopt a processual approach to the study of interlevel linkages in school organizations. We can conclude that availability of information across levels and interaction among participants are positively correlated with frequency of evaluation in school organizations. The correlation between bureaucratic rules and frequency of evaluation, on the other hand, was found to be generally weak. The failure of bureaucratization variables requires a closer examination since bureaucratic rules correlate strongly with frequency of evaluation in some situations but not in others. Another instance that is worth mentioning in this connection is the performance of the two representative bureaucratization variables in our prediction equation. While the partial regression coefficient for the existence of district-wide evaluation forms for teacher evaluation is almost zero (.02), it is .38 when a school has its own evaluation forms. Although both bureaucratic procedures are concerned directly with teacher evaluation, the two results are significantly different. A possible explanation is that district-wide evaluation forms for teacher evaluation do not carry the same amount of pressure potential to activate the principal as an evaluator. A situation such as this could also be interpreted as an instance of loose coupling in school organizations.

It is also worth noting that the type of information involved in an evaluation situation makes a difference. Two of the representative information variables in the regression equation at the school level

demonstrate this. If the principal has information on criteria-based achievement scores, the partial regression coefficient is .23; however, it is only .07 if the principal has information on methods of reading instruction. Also, it makes a difference if a teacher perceives the principal as well-informed about instructional matters. The first instance is likely to generate more pressure on the teacher as an evaluatee than the second. The partial regression coefficients for these two types of information in Table 18 point to this underlying difference.

One theoretically relevant issue deserves some attention. In analyzing our data, we controlled for type of classroom at the school as well as at the classroom level. A common pattern seems to emerge. Principals and teachers in schools with open-space classrooms tend to respond similarly to the existence of bureaucratic rules in the performance of their control task. There is consistently a stronger correlation between frequency of evaluation and bureaucratic rules among this category of evaluators than among principals and teachers in schools with self-contained classrooms. These findings are reported in Tables A-1 to A-4 in the Appendix.

Another point of theoretical interest is the idea of school organizations as loosely coupled systems. A close examination of some of the characteristics listed in the literature would indicate that frequency of evaluation could be incorporated in our definition of loose coupling. Frequency of evaluation, according to our findings, correlates with two important organizational processes: information and interaction. Information flow across levels and interaction among participants seem to cohere, and frequency of evaluation is a possible indicator of their presence. This assertion is supported by the fact that six representative variables of bureaucratic rules, information, and interaction determine approximately 43 percent of the variation in frequency of the principal's evaluation of teachers on teaching reading and 32 percent of the variation in frequency of the teacher's report of the principal's evaluation of the teacher on teaching subject matter.

Infrequent evaluation could therefore be used as one of the defining properties of loosely coupled systems. We suggest that school organizations are loosely coupled because evaluation is less frequent. This, of course, raises the question of the frequency of evaluation in organizations that are tightly coupled. We would need to study some tightly coupled organizations, using our findings as a benchmark for comparisons. Only then will we be able to assess the degree to which school organizations are loosely coupled in terms of frequency of evaluation across levels.

Implications

One problem about evaluation in school organizations is that it is infrequent across levels. Teachers, for example, seem more satisfied when evaluation of their performance is less infrequent, regardless of whether the evaluations are positive or negative. As Thompson and others have observed, "teacher evaluations currently received in the public schools are so infrequent that teachers are . . . almost eager for increased attention" (Thompson, Dornbusch, and Scott, 1975, p. 14). The problem is the relative lack of frequent evaluations. The question is how to increase the frequency of evaluations in school organizations. Obviously, we could not increase the frequency of evaluations in school organizations without first being able to identify some of the factors associated with it. We consider our research findings useful from this standpoint.

One way of increasing frequency of evaluations in school organizations is to create structures for the maximization of information and interaction opportunities across levels and among participants. The sequence of any such strategic intervention would probably require some further field experimentation, because we have not identified all the factors associated with frequency of evaluation, nor have we determined the direction of causation.

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Appendix

TABLE A-1

Relation Between Explicit Procedures and Frequency of Principal's Evaluation of Teachers on Teaching Reading, Controlling for Sex, Tenure, SES of School, School Size, and Type of Classroom (Expressed in Gammas)

	Sex		Tenure		School SES		Size		Classroom Type	
Type of Procedure	Male (N=80)	Female (N=22)	Short (N=54)	Long (N=42)	Low (N=86)	High (N=15)	Small (N=46)	Large (N=56)	Open (N=47)	Self-contained (N=54)
School has procedures for evaluating the success of a reading program	.27**	.23	.46**	.19	.25	.04	.37**	.16	.48*	.07
District expects principal to keep records containing systematic information on teacher evaluation	.01	.89	-.22	.00	.08	.60	.16	.14	.29	.03
District has standard forms for teacher evaluation	.16	-	.60	-	.21	-	-.94	.64	.35	-.32
School has forms for teacher evaluation	.44**	.07	.34	.34	.33	.25	.23	.42	.46	.21

Chi-square significance level: *.05 **.01

TABLE A-2

Relation Between Rules Governing Classroom Procedures and Frequency of Teacher's Evaluation of Students' Written Work, Controlling for Sex, Tenure, SES of Students, Type of Classroom, and Teaming (Expressed in Gammas)

	Sex		Tenure		Student SES		Classroom Type		Teaming	
Task Evaluated	Male (N=23)	Female (N=136)	Yes (N=143)	No (N=18)	Low (N=93)	High (N=67)	Open (N=34)	Self-contained (N=128)	Member (N=79)	Non-Member (N=68)
Math	-.03**	.44	.43***	-.14	.35	.36***	.66	.15***	.16	.45
Reading	.06	.44	.39***	.23	.34	.33***	.55	.27***	.29	.31
Social studies	.38*	.33*	.30	.75	.32	.42	.48	.30	.36*	.25

Chi-square significance level: *.05 **.01 ***.001

TABLE A-3

Relation Between Teacher's Expectation of Adherence to a Definite Sequence of Concepts in Instructional Program and Frequency of Teacher's Evaluation of Students' Written Work, Controlling for Sex, Tenure, SES of Students, Type of Classroom, and Teaming
(Expressed in Gammas)

	Sex		Tenure		Student SES		Classroom Type		Teaming	
Task Evaluated	Male (N=23)	Female (N=137)	Yes (N=144)	No (N=18)	Low (N=94)	High (N=67)	Open (N=34)	Self-contained (N=129)	Member (N=82)	Non-Member (N=69)
Math	.37***	.51	.50***	.57	.58	.49**	.48	.52***	.49	.46
Reading	.72	.35***	.44***	.44	.52**	.39*	.78	.31***	.49***	.29
Social studies	.44**	.21	.25	.14	.29	.23*	.47	.18	.31	.12

Chi-square significance level: *.05 **.01 ***.001

TABLE A-4

Relation Between School-Wide Policies Governing Student Conduct and Teacher Reports of Frequency of Evaluation on Maintaining Control, Controlling for Sex, Tenure, SES of Students, Type of Classroom, and Teaming (Expressed in Gammas)

	Sex		Tenure		Student SES		Classroom Type		Teaming	
Source of Evaluation	Male (N=32)	Female (N=181)	Yes (N=196)	No (N=20)	Low (N=127)	High (N=84)	Open (N=46)	Self-contained (N=170)	Member (N=115)	Non-Member (N=86)
Principal	.14	.20	.18*	.42	.21*	.08	.22	.21*	.24*	.11
Other teachers	.20	.20	.24	-.13	.12	.30	.32	.17	.26	.10

Chi-square significance level: *.05

TABLE A-5

Relation Between Principal's Information about Classrooms and Frequency of Principal's Evaluation of Teachers on Teaching Reading, Controlling for Sex, Tenure, SES of School, School Size, and Type of Classroom (Expressed in Gammas)

	Sex		Tenure		School SES		Size		Classroom Type	
Type of Information	Male (N=81)	Female (N=22)	Short (N=54)	Long (N=43)	Low (N=85)	High (N=15)	Small (N=46)	Large (N=57)	Open (N=47)	Self-contained (N=56)
Reading methods used in each classroom	.31	-.02	.25	.26	.32	-.14	.20	.29	.46	.08
Criteria-based achievement scores or criteria for evaluating student learning	.45*	-.03	.47*	.42	.37**	.75	.52	.33*	-.02	.72*
Other systematic data on student performance	.30	-.30**	.33	.20	.20	-.07	.12	.25	.32	.11

'Chi-square significance level: *.05 **.01

TABLE A-6

Relation Between Teacher's Perception of Principal as Well-Informed and Teacher's Report of Frequency of Principal's Evaluation on Teaching Subject Matter and Maintaining Control, Controlling for Sex, Tenure, SES of Students, Type of Classroom, and Teaming (Expressed in Gammas)

	Sex		Tenure		Student SES		Classroom Type		Teaming	
Type of Information	Male (N=70)	Female (N=373)	Yes (N=408)	No (N=36)	Low (N=272)	High (N=159)	Open (N=117)	Self-contained (N=330)	Member (N=257)	Non-Member (N=157)
(Subject Matter)										
Instructional matters	.50	.43***	.44***	.47	.38***	.52***	.51***	.40***	.52***	.41***
Classroom instructional activities	.65***	.57***	.59**	.39	.53***	.66***	.69***	.52***	.62***	.58***
(Maintaining Control)										
Discipline problems in classrooms	.33	.46***	.46***	.29	.32*	.59***	.47***	.42***	.43***	.46***

Chi-square significance level: *.05 **.01 ***.001

TABLE A-7

Relation Between Interaction of Principal with Teachers and Principal's Report of Frequency of Evaluation of Teachers on Teaching Reading, Controlling for Sex, Tenure in School, SES of School, School Size, and Type of Classroom
(Expressed in Gammas)

	Sex		Tenure		School SES		Size		Classroom Type	
Nature of Interaction	Male (N=81)	Female (N=22)	Short (N=54)	Long (N=43)	Low (N=88)	High (N=15)	Small (N=46)	Large (N=57)	Open (N=47)	Self-contained (N=56)
Principal talks with teachers about their work	.51**	.70**	.54*	.48	.58***	.34	.62***	.49	.46	.67***
Principal gives teachers advice or information about teaching	.48	.87*	.41	.70***	.62***	.15	.66***	.48	.46	.67***

Chi-square significance level: *.05 **.01 ***.001

TABLE A-8

Relation Between Interaction of Teacher with Principal and Teacher's Report of Frequency of Principal's Evaluation of Teacher on Teaching Subject Matter, Controlling for Sex, Tenure, SES of Students, Type of Classroom, and Teaming (Expressed in Gammas)

	Sex		Tenure		Student SES		Classroom Type		Teaming	
Nature of Interaction	Male (N=36)	Female (N=186)	Yes (N=204)	No (N=17)	Low (N=144)	High (N=73)	Open (N=70)	Self-contained (N=152)	Member (N=138)	Non-Member (N=70)
Teacher talks with principal	.29	.28***	.26***	.31	.21*	.37	.03*	.37***	.23*	.36*
Teacher seeks out principal to talk about teacher's work	.18	.36**	.34**	.01	.35*	.26	.30	.35*	.30**	.31
Teacher reports advice on classroom teaching practices from principal	.45*	.45***	.45***	.45	.47***	.42*	.55***	.41***	.43***	.46**

Chi-square significance levels: *.05 **.01 ***.001

TABLE A-9

Relation Between Interaction of Teacher with Principal and Teacher's Report of Frequency of Principal's Evaluation of Teacher on Maintaining Control, Controlling for Sex, Tenure, SES of Students, Type of Classroom, and Teaming (Expressed in Gammas)

	Sex		Tenure		Student SES		Classroom Type		Teaming	
Nature of Interaction	Male (N=36)	Female (N=186)	Yes (N=204)	No (N=17)	Low (N=144)	High (N=73)	Open (N=70)	Self-contained (N=152)	Member (N=138)	Non-Member (N=70)
Teacher talks with principal	.50	.30**	.28**	.54	.24	.42**	.20	.33***	.32***	.31
Teacher seeks out principal to talk about teacher's work	.24	.41**	.36**	.32	.42**	.23	.37	.36*	.34**	.36
Teacher reports advice on classroom teaching practices from principal	.39	.35***	.37***	.10	.33***	.33***	.37***	.34***	.25*	.46***

Chi-square significance level: *.05 **.01 ***.001

TABLE A-10

Relation Between Interaction among Teachers and Teacher's Report of Frequency of Other Teachers' Evaluation of Teacher on Teaching Subject Matter, Controlling for Sex, Tenure, SES of Students, Type of Classroom, and Teaming (Expressed in Gammas)

	Sex		Tenure		Student SES		Classroom Type		Teaming	
Nature of Interaction	Male (N=33)	Female (N=173)	Yes (N=187)	No (N=18)	Low (N=115)	High (N=83)	Open (N=46)	Self-contained (N=162)	Member (N=114)	Non Member (N=87)
Teacher takes other classroom teachers into account on teaching approach	.44	.29*	.31*	.41	.26*	.39	.55	.23	.34	.21
Teacher takes other classroom teachers into account on lesson content	.23	.24	.24	.28	.23	.29*	.54	.17	.33**	.08
Teacher is member of a teaching team	.53	.24	.28	.40	.43*	.10	-	.27*	-	-

Chi-square significance level: *.05 **.01

TABLE A-11

Relation Between Interaction among Teachers and Teacher's Report of Frequency of Other Teachers' Evaluation of Teacher on Maintaining Control, Controlling for Sex, Tenure, SES of Students, Type of Classroom, and Teaming (Expressed in Gammas)

	Sex		Tenure		Student SES		Classroom Type		Teaming	
Nature of Interaction	Male (N=32)	Female (N=173)	Yes (N=187)	No (N=18)	Low (N=115)	High (N=83)	Open (N=46)	Self-contained (N=162)	Member (N=114)	Non-Member (N=87)
Teacher takes other classroom teachers into account on teaching approach	.11	.25	.22	.35	.20	.32	.52	.15	.26	.17
Teacher takes other classroom teachers into account on scheduling of class periods	.22	.06	.08*	.14	.06	.17	.45	.00	.07**	.03
Teacher shares instructional materials with other teachers	.18	.21	.26	-.04	.24	.25	.30	.21	.11	.24
Teacher is member of a teaching team	.25	.26	.27	.40	.37	.12	-	.25	-	-

Chi-square significance level: *.05 **.01

TABLE A-12

Relation Between Interaction of Teacher with Students and Teacher's Report of Frequency of Evaluation of Students' Written Work in Reading, Controlling for Sex, Tenure, SES of Students, Type of Classroom, and Teaming (Expressed in Gammas)

			Tenure		Student SES		Classroom Type		Teaming	
Nature of Interaction	Male (N=26)	Female (N=177)	Yes (N=186)	No (N=19)	Low (N=96)	High (N=66)	Open (N=33)	Self-contained (N=135)	Member (N=81)	Non Member (N=71)
Teacher talks to students about their specific skill needs	.40	.54**	.51**	.70	.47	.48	.56	.49	.56*	.52
Teacher talks to students about their interest in reading	-.03	.23	.18	.35	.05	.14	-.08	.16	.02	.29

Chi-square significance level: *.05 **.01